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09/762,765	05/01/2001	Costa Tzoganakis	1811-228 MIS:jb	7506
24223	7590	01/26/2004	EXAMINER	
SIM & MCBURNEY 330 UNIVERSITY AVENUE 6TH FLOOR TORONTO, ON M5G 1R7 CANADA			TESKIN, FRED M	
			ART UNIT	PAPER NUMBER
			1713	12

DATE MAILED: 01/26/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.  
09/762,765

Applicant(s)  
Tzoganakis, et al.

Examiner  
Fred Teskin

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE THREE (3) MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on Oct 29, 2003
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above, claim(s) 16 and 17 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 18 is/are allowed.
- 6) ☒ Claim(s) 1-7, 9, 13, and 19-22 is/are rejected.
- 7) ☒ Claim(s) 8, 10-12, 14, and 15 is/are objected to.
- 8) ☐ Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some\* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). 2 6) ☐ Other:

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1. Applicants' election of the invention of Group I, claims 1-14 and 18-22 in paper no. 13 is acknowledged. Because applicants did not distinctly and specifically point out the supposed errors in the restriction requirement, the election is treated as an election without traverse (see MPEP 818.03(a)). Nevertheless, examiner has determined *sua sponte* that inasmuch as claim 15 is drawn to a copolymer coupled to the same type of surfaces as the coupled copolymer of claim 10 (e.g., inorganic surfaces), this claim should be examiner together with the claims to the elected invention. Accordingly, claims 1-15 and 18-22 are subject to examination herein.

2. Claims 16 and 17 stand withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention. Election was made **without** traverse in paper no. 13.

3. If applicant desires priority under 35 U.S.C. 119(e) based upon a previously filed copending application, specific reference to the earlier filed application must be made in the instant application. This should appear as the first sentence of the specification following the title, preferably as a separate paragraph unless it appears in an application data sheet (not the

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case here). The status of nonprovisional parent application(s) (whether patented or abandoned) should also be included. If a parent application has become a patent, the expression "now Patent No. \_\_\_\_\_" should follow the filing date of the parent application. If a parent application has become abandoned, the expression "now abandoned" should follow the filing date of the parent application.

If the application is a utility or plant application filed under 35 USC 111(a) on or after November 29, 2000, the specific reference must be submitted during the pendency of the application and within the later of four months from the actual filing date of the application or sixteen months from the filing date of the prior application. If the application is a utility or plant application which entered the national stage from an international application filed on or after November 29, 2000, after compliance with 35 USC 371, the specific reference must be submitted during the pendency of the application and within the later of four months from the date on which the national stage commenced under 35 USC 371(b) or (f) or sixteen months from the filing date of the prior application. See 37 CFR 1.78(a)(2)(ii) and (a)(5)(ii). This time period is not extendable and a failure to submit the reference required by 35 U.S.C. 119(e) and/or 120, where applicable, within this time period is considered a waiver of any benefit of such

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prior application(s) under 35 U.S.C. 119(e), 120, 121 and 365(c). A priority claim filed after the required time period may be accepted if it is accompanied by a grantable petition to accept an unintentionally delayed claim for priority under 35 U.S.C. 119(e), 120, 121 and 365(c). The petition must be accompanied by (1) the reference required by 35 USC 120 or 119(e) and 37 CFR 1.78(a)(2) or (a)(5) to the prior application (unless previously submitted), (2) a surcharge under 37 CFR 1.17(t), and (3) a statement that the entire delay between the date the claim was due under 37 CFR 1.78(a)(2) or (a)(5) and the date the claim was filed was unintentional. The Commissioner may require additional information where there is a question whether the delay was unintentional. The petition should be directed to the Office of Petitions, Box DAC, Assistant Commissioner for Patents, Washington, DC 20231.

4. The disclosure is objected to because of the following informalities: at page 4, line 16, "dehydrosilylation" appears incorrect and presumably should read -hydrosilylation- (cf., claim 19, line 3).

5. Claims 9, 13 and 19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point

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out and distinctly claim the subject matter which applicant regards as the invention.

(A) Claim 9 provides the limitation "PP", which lacks proper antecedent basis in the claims (cf., claim 1, line 1).

(B) Claim 13 is confusing in the recitation "connected into a Si-OH group ...". Presumably "connected" should read -converted-. Clarification and appropriate correction are required.

(C) Claim 19 is incomplete, hence indefinite, due to lack of definition for the variable "R" of the "Si-OR groups" recited in the penultimate line.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. § 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 C.F.R. § 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of potential 35 U.S.C. § 103© and potential 35 U.S.C. § 102(f) or (g) prior art under 35 U.S.C. § 103(a).

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country,

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more than one year prior to the date of application for patent in the United States.

8. The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 1-7 and 20-22 are rejected under 35 U.S.C. § 103(a) as unpatentable over WO 97/47665, in view of EP 0802216 ("Dow").

WO '665 teaches polysiloxane-modified polypropylene made by hydrosilylating terminal double bonds in the polymer, the reaction being performed via melt phase reactive extrusion methodology (page 2, lines 10 et seq.). As in the present invention, the terminal double bonds may be created by via peroxide degradation of polypropylene (see page 3, final paragraph and cf. claim 21, line 2). Reactive extrusion hydrosilylation of polypropylene with polydimethylsiloxane is demonstrated (page 17, Example 6).

WO '665 differs from the present invention in the provision of of linear products rather than "branched" copolymers as claimed.

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However, WO '665 teaches that polysiloxanes having at least 2 Si-H groups may provide polypropylenes suitable as reactive compatibilizers (see page 6, bridging paragraph). It is further known from Dow that polypropylenes copolymerized with polysiloxanes having at least 2 SiH groups per molecule are eminently suitable as, *inter alia*, compatibility improvers. See pages 2-4 where various formulae representing organohydrido polysiloxanes, having two or more SiH groups per molecule, are disclosed; and page 9, lines 33-36, where the suitability of the copolymer product as a compatibility improver is mentioned.

Inasmuch as WO '665 is similarly concerned with providing polypropylenes suitable as reactive compatibilizers, it would have been obvious to one of ordinary skill in the art to use as the polysiloxane modifier of WO '665, an organohydrido polysiloxane having two or more SiH groups per molecule as taught by Dow, with a reasonable expectation of obtaining a branched polymer product owing to the reactivity of the plural Si-H groups of the silicone polymer.

10. Claims 1-7 are rejected under 35 U.S.C. § 102(b) as anticipated by, or in the alternative, under 35 U.S.C. § 103(a) as obvious over US 5663245 to Kennedy et al.



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Kennedy discloses multi-arm polyisobutylene having a siloxane core (col. 2, lines 44-47). The polyisobutylene arms are linked to the siloxane core, which is described as a "siloxane having functional Si-H groups somewhere in the polymer chain" (col. 5, lines 4-6). In columns 5-6, siloxanes having multiple Si-H groups within the polymer chain are described. Kennedy states that any siloxane having more than one functional Si-H group can be used to link a plurality of olefin-terminated polyisobutylenes by hydrosilation (col. 6, lines 55-60). Such multiple linkages qualify as a "branched" structure within claim 1.

While the multi-arm star polymers of Kennedy are not produced by the same melt phase extrusion process used to make the claimed products, this preparational difference is not seen to distinguish the ultimate branched copolymer product over a multi-arm polyisobutylene prepared as per Kennedy.

It is well settled that product-by-process claims are not limited to the manipulations of the recited steps, only the structure implied by the steps. "Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. If the product in the product by process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior

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art product was made by a different process." *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985).

11. The prior art made of record and not relied upon is considered pertinent to applicants' disclosure.

Mori is cited to show silane-crosslinked polyolefin produced by a melt-blending process.

King, III et al is cited to show a method for crosslinking reactive polyolefins via a rhodium-catalyzed hydrosilation reaction employing polyorganosiloxane crosslinkers.

12. Claims 8, 10-12, 14 and 15 are objected to as being dependent on a rejected base claim but would be allowable if rewritten in independent form to include all the limitations of the base claim and any intervening claim. Claims 9, 13 and 19 would be allowable if amended or rewritten to overcome the rejection under 35 U.S.C. § 112 set forth in this Office action.

13. Claim 18 is allowable over the prior art of record.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner F.


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M. Teskin whose telephone number is (703) 308-2456. The examiner can normally be reached on Monday through Thursday from 7:00 AM - 4:30 PM, and can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu, can be reached on (703) 308-2450. The appropriate fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0661.

FMTeskin/12-12-03

  
FRED TESKIN  
PRIMARY EXAMINER  
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